



State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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December 28, 1995

TO: Minerals File

FROM: Tony Gallegos, Reclamation Engineer *aa*

RE: Meeting, Kennecott Utah Copper, Tailings Modernization Project Mine, M/035/015, Salt Lake County, Utah

Date of Meeting: December 20, 1995
Time of Meeting: 1000 - 1230
Location: Division Offices
Participants: Bob Dunne, Paula Doughty, Rick Jones, KUC; Bill Schafer, Schafer & Associates; Don Runnells, Shepherd Miller, Inc.; John Whitehead, DWQ; Gene Farmer, Consultant for the State; Wayne Hedberg, Tony Gallegos, Lynn Kunzler; DOGM

Purpose of Meeting: To discuss Kennecott's report "Acidification Potential of the Kennecott Tailings" in relation to the permit applications currently being processed by DWQ and the Division.

Prior to the scheduled meeting Paula Doughty delivered a response to the Division comments relayed to Kennecott during a phone conversation on December 15, 1995. A copy of the Division's informal comments from this phone conversation was provided to Kennecott on this date. The Division comments and Kennecott's response pertained to the details and assumptions used in calculating the reclamation surety estimate.

The lack of samples from the interior of the existing tailings impoundment was one topic of discussion. Kennecott explained the main reason for this was due to the lack of safe access. In relation to this, Bob Dunne mentioned that while Kennecott does not have access to the interior at this time, they will have some access in the future when they are reclaiming the existing impoundment. He then described the proposed technique and sequence of reclaim dikes to be constructed on the existing impoundment as part of the transition to the new impoundment. The reclaim dikes would provide access to the interior of the impoundment and allow for some additional sampling. It was agreed that additional sampling of the interior tailings could be coordinated with the construction of the reclaim dikes. Additional sampling would also add more validity to the characterization of the tailings materials in the interior of the impoundment. The finer details of the reclaim dike construction and sequence were new and useful information to the Division. While the reclamation of the existing tailings facility is not the subject of the current permit review, the Information describing the planned transition activities would be helpful for both the Division and DWQ.



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The existing dikes on the existing impoundment were constructed using materials borrowed from other areas in the impoundment or on the embankment. The density of the uncompacted tailings material is 72-78 pounds per cubic foot. Approximately 300 feet from the deposition point there is no gradation in the particle size of the impounded tailings.

The Division had a concern with the ABA techniques used in the Acidification report. Specifically, the method used to arrive at the neutralization potential. Kennecott agreed to provide a description of the ABA testing protocols used to arrive at the information in the report.

In respect to the predicted acidification of up to 35% of the future tailings embankment, the Division prefers a pro-active approach which prevents or minimizes acidification from occurring, while Kennecott seems to prefer taking a reactive approach by treating the acidification after it occurs. In addition, Kennecott would prefer to treat a limited amount of the acidified areas instead of all the areas. The viewpoint of the Division is that no acidification is preferred, while Kennecott's views a limited amount of acidification as acceptable. The amount of acidification deemed acceptable and the extent of the acidification (pH and depth) are issues which could not be resolved during this meeting.

The Division and DWQ proposed ongoing monitoring of the existing tailings impoundment and monitoring/sampling of the tailings expansion during its construction and future operation. The monitoring and sampling of the future tailings expansion would validate or invalidate the assumption that the characteristics of the existing impoundment could be extrapolated to predict the characteristics of the expansion. Kennecott agreed to the principle of additional sampling and monitoring and they would be doing some additional sampling anyway. The details of such a sampling and monitoring plan need to be worked out. It was agreed that the sampling and monitoring plan would be the topic of the next meeting.

In conclusion, Kennecott agreed to provide this Division and DWQ with the following information:

1. A detailed description of the reclaim dike construction methodology and pertinent schedule for the existing tailings impoundment (i.e., a formal write up of Mr. Dunne's reclamation sequencing presentation and chalk board diagram from the 12/20/95 meeting).
2. A draft outline of Kennecott's proposed tailings monitoring plan at least one week before our next scheduled meeting (January 30, 1996).
3. A copy of the laboratory protocol used in the ABA accounting work as described in the acidification report.
4. A complete summary of all the parameters to be monitored as part of the proposed tailings monitoring plan.

jb
cc: Bob Dunne, KUC
Gene Farmer, Consultant
John Whitehead, DWQ
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